

REMARKS

Claims 1-20 are pending. Claims 1-20 stand rejected. Claim 1 has been amended to limit the aqueous polymer composition to one "comprising substantially no stabilizing surfactants". This amendment is supported the present specification at page 8, line 20. Claims 1, 5 and 17 have been amended for clarity. Claims 3 and 6 have been amended to correct for antecedent basis and redundancy. Claims 9 and 12 have been amended to correct punctuation. Accordingly, no new matter has been added by these amendments.

Reply to the Objections to the Claims

The Examiner has objected to claims 9 and 12 for various informalities. Specifically, the Examiner states that the claims do not end in a period; they are not complete sentences." Claims 9 and 12 have been amended to correct these informalities. It is believe that these amendments overcome the Examiners objections to Claims 9 and 12. Withdrawal of the objection is respectfully requested.

Reply to the Rejection of the Claims under the Double Patenting Doctrine

The Examiner has provisionally rejected Claims 1-10 and 12-18 under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 and 2 of co-pending U.S. Application No. 09/690 387. Should the 09/690 387 application grant in its current form, Applicants would consider the filing of a terminal disclaimer. Applicants respectfully request deferment of this issue pending the outcome of the present case and the '387 application.

Reply to the Rejection of the Claims under 35 U.S.C. § 102(e)

Diehl -

The Examiner has rejected claims 1-10 and 12-20 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,337,379 to Diehl *et al.* ("Diehl"). Specifically, the Examiner states –

Diel [*sic*, Diehl] et al teach a latex binder comprising hydrophobic monomers (styrene), hydrophilic acidic monomers (itaconic acid, acrylic acid), water, and a surfactant (column 3, lines 29+ and the example). The latex is neutralized with bases such as sodium hydroxide as claimed. The materials are applied to a fiber

mat (a textile application) in which solids concentrations of 15-45% are used (column 3, lines 1+). The applicants state that their materials are not cross-linked. While the materials taught by Diel [*sic*, Diehl] et al. are cross-linked this is done after the materials are dried at a lower temperature (212 deg F) (example). The intermediate (un-cured) product would correspond to the claimed materials.

The applicants claim a number of physical properties such as clarity, solubility in basic or acid media etc. . . . The examiner takes the position that the monomer used would yield clear base soluble materials based on the monomers used because they correspond to the types of materials used by the applicants in the instant application.

Regarding claim 16, the fiber web formed is used in personal hygiene products so the materials do get wet. In this instance, the web would be water-resistant, as it would resist falling apart when placed in contact with water.

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-10 and 12-20 as being anticipated by Diehl.

Referring to Diehl, therein is disclosed a latex binder for nonwoven fabric applications in personal hygiene articles (Abstract). The latex binder is prepared by polymerizing a first monomer mixture that includes styrene, itaconic acid, surfactant and water soluble free radical initiator to form a seed (col. 3, lines 28-30). The surfactant is added in an amount of from about 0.05 to about 2.0 wt % (col. 3, lines 42-43). A second monomer mixture of styrene, butadiene and acrylic acid is added to the first monomer mixture under emulsion polymerization conditions to form a styrene-butadiene-acrylic acid copolymer (col. 3, lines 30-35).

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). "When a claim covers several structures or compositions, either generically or as alternatives, the claim is deemed anticipated if any of the structures or compositions within the scope of the claim is known in the prior art." *Brown v. 3M*, 265 F.3d 1349, 1351, 60 USPQ2d 1375, 1376 (Fed. Cir. 2001) (claim to a system for setting a computer clock to an offset time to address the Year 2000 (Y2K) problem, applicable to records with year date data in "at least one of two-digit, three-digit, or four-digit" representations, was held anticipated by a system that offsets year dates in only two-digit formats). See also MPEP § 2131.02. "The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The elements must be arranged as required by the claim, but this is not an *ipsissimis verbis* test, *i.e.*, identity of terminology is not required. *In re*

Bond, 910 F.2d 831, 15 USPQ2d 1566 (Fed. Cir. 1990).

As amended, Applicants require that the polymer composition contain substantially no stabilizing surfactants. Applicants' specification states that "the aqueous polymer composition of the invention is a solution or a dispersion having essentially no stabilizing surfactants, as opposed to a latex or emulsion polymer composition" (U.S. Patent Application Publication No. 2003/0072950, ¶ 0032) (emphasis added). The present invention is not a latex composition. Diehl specifically titles, claims and teaches a latex binder. The present invention has been amended to add the limitation that it does not contain a stabilizing surfactant. The invention of Diehl requires the use of a stabilizing surfactant. For at least these reasons, Diehl does not anticipate the presently claimed invention. Withdrawal, therefore, of the rejection of claims 1-10 and 12-20 as being anticipated by Diehl is respectfully requested.

Schoenberg and Westerman -

The Examiner has rejected claims 1-20 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,150,468 to Schoenberg *et al.* ("Schoenberg") with additional evidence provided by U.S. Patent No. 6,488,764 to Westerman ("Westerman") if deemed necessary. Specifically, the Examiner states –

Schoenberg *et al.* teach emulsions comprising "star polymers" made from butyl acrylate (a hydrophobic monomer according to applicants' specification page 6) and acrylic monomers (a hydrophilic monomer). See Example III: The compositions comprise 10% solids, are clear and comprise: ethanol, which would function as an "anti-microbial agent" (claim 5) and sodium hydroxide.

The star polymer is also incorporated into a second composition (see column 7, lines 26+ and Examples 8 and 9), which is used as a laminating adhesive. See Westerman column 6, lines 67+, which shows that the Aerosol™ material used in Examples VIII and IX is a surfactant as claimed.

Both the intermediate product (star polymer) and the final product (polymer composition comprising the star polymer) read on the applicants' composition.

Regarding claims 17-20, the material taught are used as "coating" and "adhesives" which gives clear indication that the materials are used in multilayer structures, and they are used as sizes in "textile applications" (column 8, lines 46+). This is described with sufficient specificity to meet the applicants' claims directed to "coated articles" and "method of using the composition".

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-20 as being anticipated by Schoenberg or rendered obvious by Schoenberg in view of

Westerman.

Referring to Schoenberg, therein is disclosed amphiphilic star polymers having both hydrophobic and hydrophilic arms (col. 1, lines 25-27). The amphiphilic star polymers have a polyvalent mercaptan core and three or more polymer arms extending radially from the core, wherein at least one of the arms is a hydrophobic moiety and the remaining arms are hydrophilic (col. 1, lines 40-49). These star polymers are formed by first preparing the mercaptan core from a multifunctional alcohol wherein each of the -OH functional units are substituted with thiol units, with at least two of the thiol units being of differing compositions (col. 1, lines 60-67; Examples I and II; *see also*, Examples III and IV for teaching first the formation of the mercaptan core, from which the amphiphilic star polymer is then formed). Monomers are then added to the mercaptan core to form the star polymer (col. 3, line 66 – col. 4, line 2; col. 4, lines 38-40 and 47-49; col. 4, line 60 – col. 5, line 19; Examples III-IX). Useful monomers for preparing the polymer arms include ethylenically unsaturated monomers such as acrylic and methacrylic acids, acrylonitrile, styrene and vinyl esters (col. 5, line 25 – col. 6, line 33). A surfactant (Aerosol[®] MA) is used in the emulsion polymerization (Examples VIII and IX; *see also*, col. 7, lines 17-25 providing examples of various types of surfactants).

Westerman teaches the preparation of styrene-butadiene polymeric latex by aqueous emulsion polymerization of a monomeric mixture of styrene and butadiene in the presence of a seed polymer (Abstract; col. 3, lines 54-57). Aqueous emulsion polymerization of styrene and a salt of 2-acrylamido-2-methylpropanesulfonic acid form the seed polymer (Abstract; col. 3, lines 57-59; col. 4, lines 25-62). The polymeric latex is used in a cement composition (Abstract; col. 4, lines 8-11). The Examiner refers to Westerman for evidence that the Aerosol[®] used in Examples VIII and IX of Schoenberg is a surfactant. Westerman also teaches the use of mercaptans (Sulfole[®]) in the formation of its polymerizable mixture (col. 7, lines 6-51).

In contrast to Schoenberg and Westerman, the present invention as amended does not contain a stabilizing surfactant such as Aerosol[®] or other anionic, cationic or non-ionic surfactants. Further, Schoenberg teaches that “[I]t is well known to those skilled in the art of free radical emulsion polymerization that emulsion polymers which are stable to coagulation, flocculation or sedimentation are generated in the presence of surface active and/or stabilizing moieties” (col. 7, lines 13-17), effectively teaching away from the presently claimed invention. Accordingly, Schoenberg teaches a different chemistry and therefore different compound from

that of the present invention and cannot be said to anticipate the presently claimed invention. For at least these reasons, withdrawal of the rejection of claims 1-20 as being anticipated by Schoenberg, with additional evidence from Westerman, is respectfully requested.

Kneip -

The Examiner has rejected claims 1-10 and 12-20 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,200,640 to Kneip *et al.* ("Kneip"). Specifically, the Examiner states –

Kneip *et al.* teach polymeric dispersions used to tan leather (claims). The materials comprise a tanning agent (preservative) and are neutralized with a base such as sodium hydroxide (column 8, lines 41+). The solutions have solids contents within the preferred range of 20 to 60% (column 8, lines 58-60).

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-10 and 12-20 as being anticipated by Kneip.

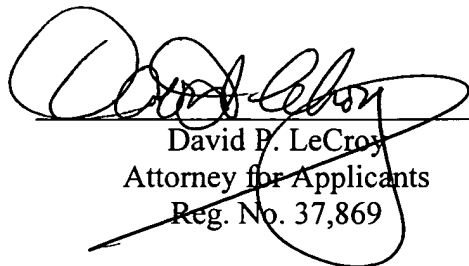
Referring to Kneip, therein is disclosed a polymeric composition and process for treating leather and fur skins. Copolymers are obtained by free-radical copolymerization of at least one monoethylenically unsaturated C₄- to C₆-dicarboxylic acid or anhydride thereof, at least one olefin having 2 to 6 carbon atoms, at least one hydrophobic comonomer, and at least one comonomer selected from acrylic acid, methacrylic acid, methyl methacrylate, N,N-dimethylaminoethyl acrylate and styrene (Abstract; col. 6, lines 3-24).

In contrast to Kneip, the present application does not require the use of olefin monomers to produce its aqueous polymer composition. For at least these reasons, withdrawal of the rejection of claims 1-10 and 12-20 as being anticipated by Kneip is respectfully requested.

It is believed that the above amendments and remarks overcome the Examiner's objections to and rejections of the claims. Withdrawal of those objections and rejections is respectfully requested. Allowance of the claims is believed to be in order, and such allowance is respectfully requested.

Respectfully submitted,

Dated: 28 July 2003
NATIONAL STARCH AND CHEMICAL
COMPANY
Post Office Box 6500
Bridgewater, New Jersey 08807-0500
Phone 908.683.5433
Fax 908.707.3706


David P. LeCroy
Attorney for Applicants
Reg. No. 37,869